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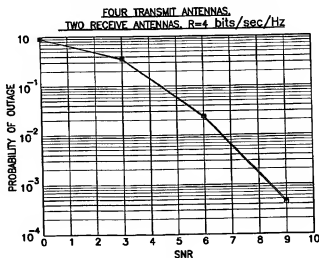
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(54) Title: **LOW COMPLEXITY BEAMFORMERS FOR MULTIPLE TRANSMIT AND RECEIVE ANTENNAS**



— SPATIAL WATER-FILLING WITH PERFECT CSIT
— POWER ALLOCATION QUANTIZED TO 2 BITS

(57) Abstract: Beamforming systems having a few bits of channel state information fed back to the transmitter benefit from low complexity decoding structures and performance gains compared with systems that do not have channel state feedback. Both unit rank and higher rank systems are implemented. Substantial design effort may be avoided by following a method of using functions formulated for space-time systems with the change that the channel coherence time is equated to the number of transmit antennas and the number of antennas in the space-time formulation is fixed at one.

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